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a decompressor that decompresses a data bitword-map to provide high spatial resolution data containing non-continuous tone data using extra resolution in a direction substantially perpendicular to an edge of marks, and that decompresses the data bitword-map to provide low spatial resolution continuous tone data.

Please add new claim 18 as follows:

18. The method of claim 13, wherein the four pixels represent a two-by-two pixel array.--

REMARKS

Claims 1-18 are pending in this application. Applicant appreciates the Office Action's indication that claims 7 and 10-12 are allowed.

By this Amendment, claims 13 and 15 amended, and new claim 18 is added.

Reconsideration of the application is respectfully requested.

The attached Appendix includes marked-up copies of each rewritten claim (37 C.F.R. §1.121(c)(1)(ii)).

Applicant thanks Examiner Do for the courtesy extended to Applicant's representative, Mr. Luo, during a March 31, 2003 personal interview. The substance of the interview is incorporated in the remarks below.

The Office Action rejects claims 1-6, 8 and 9 under 35 U.S.C. §103(a) over U.S. Patent No. 5,774,634 to Honma et al. in view of U.S. Patent No. 6,389,176 to Hsu et al. and U.S. Patent No. 5,485,289 to Curry. This rejection is respectfully traversed.

The Office Action admits that Honma does not disclose or suggest discarding pixels along a direction parallel to an edge. However, the Office Action asserts that Hsu discloses removing pixels from an edge, and that Curry discloses assigning gray values near an edge. Applicant respectfully submits that Honma, Hsu and Curry, individually or in combination,

do not disclose or suggest discarding pixels along a direction parallel to an edge while maintaining pixels along a direction perpendicular to the edge, as recited in claim 1.

As discussed in the December 19, 2002 personal interview and in the December 30, 2002 Amendment, Hsu discloses extracting objects using dilation and erosion operations. See col. 5, lines 19-20. While the dilation operation adds pixels to the boundaries of edges, the erosion operation removes pixels from the boundaries. See col. 5, lines 20-25. Hsu does not disclose or suggest discarding pixels along a direction parallel to an edge while maintaining pixels along a direction perpendicular to the edge, as recited in claim 1. Therefore, Hsu does not supply the subject matter outlined above as lacking in Honma.

As discussed at the March 31, 2003 personal interview, Curry discloses a printer architecture that improves quality of printed images. See col. 4, lines 42-59. When a feature edge is perpendicular to the fastscan direction, a rendering algorithm will utilize an on-to-off or off-to-on transition which has no intermediate gray values. See col. 20, lines 7-11. When the feature edge is parallel with the fastscan direction, gray will be used to achieve subscan precision of the edge. See col. 20, lines 14-18. Thus, Curry discloses using different gray value assignments along and across the feature edge when making prints. As is known in the art, adjusting gray values when making prints does not discard pixels. Otherwise, a printed image would be distorted. Therefore, Curry does not disclose or suggest discarding pixels in a direction parallel to the feature edge while maintaining pixels along a direction perpendicular to the feature edge. Thus, Curry does not supply the subject matter outlined above as lacking in Honma and Hsu.

For at least the above reasons, Honma, Hsu and Curry, individually or in combination, do not disclose or suggest the subject matter recited in claim 1, and claims 2-6, 8 and 9 depending therefrom. Withdrawal of the rejection of claims 1-6, 8 and 9 under 35 U.S.C. §103(a) is respectfully requested.

The Office Action rejects claims 15-17 under 35 U.S.C. §103(a) over Honma in view of the prior art described in the application (APA) and Curry. This rejection is respectfully traversed.

The Office Action admits that Honma does not disclose or suggest the use of extra resolution across edges of marks to provide high resolution data containing non-continuous tone data, or discarding pixels along a direction parallel to an edge. However, the Office Action asserts that the APA discloses more spatial resolution needed to render non-continuous tone regions than to render continuous tone regions, which is irrelevant to supplying the subject matter admitted as lacking in Honma. The Office Action further asserts that Curry discloses no intermediate gray values if a feature edge is perpendicular to the fastscan direction. Applicant respectfully submits that Honma, the APA and Curry, individually or in combination, do not disclose or suggest discarding pixels along a direction parallel to an edge while maintaining pixels along a direction perpendicular to the edge, as recited in claim 15.

As discussed in the December 19, 2002 personal interview and in the December 30 Amendment, the APA describes that a human viewer appreciates non-continuous tone art information and continuous tone art information differently. The APA does not disclose or suggest discarding pixels along a direction parallel to an edge while maintaining pixels along a direction perpendicular to the edge, as recited in claim 15. Therefore, the APA does not supply the subject matter outlined above as lacking in Honma.

As discussed in the March 31, 2003 personal interview, Curry discloses improving print quality by assigning gray values differently between regions along a feature edge and regions across the feature edge. Curry discloses assigning no gray values in a region along a feature edge. See col. 20, lines 7-11. Curry does not disclose or suggest discarding pixels. Therefore, Curry does not disclose or suggest discarding pixels along a direction parallel to

an edge while maintaining pixels along a direction perpendicular to the edge, as recited in claim 15. Thus, Curry does not supply the subject matter outlined above as lacking in Honma and the APA.

For at least the above reasons, Honma, the APA and Curry, individually or in combination, do not disclose or suggest the subject matter recited in claim 15, and claims 16 and 17 depending therefrom. Withdrawal of the rejection of claims 15-17 under 35 U.S.C. §103(a) is respectfully requested.

The Office Action rejects claims 13 and 14 under 35 U.S.C. §102(e) over U.S. Patent No. 6,026,196 to Shannon et al. This rejection is respectfully traversed.


The Office Action asserts that Shannon discloses all elements recited in claim 13. Applicant respectfully submits that, as discussed during the March 31, 2003 personal interview, Shannon does not disclose or suggest discarding pixels along a direction parallel to an edge while maintaining pixels along a direction perpendicular to the edge, as recited in claim 13. Thus, Shannon does not disclose each and every element recited in claim 13, and claim 14 depending therefrom. Withdrawal of the rejection of claims 13 and 14 under 35 U.S.C. §102(e) is respectfully requested.

New claim 18 is believed to be patentable.

In view of the foregoing amendments and remarks, Applicant submits that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-18 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in better condition for allowance, the Examiner is invited to contact Applicant's undersigned representative at the telephone number set forth below.

Respectfully submitted,



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JAO:GXL/ale

Attachment:  
Appendix

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<p><b>DEPOSIT ACCOUNT USE AUTHORIZATION</b> Please grant any extension necessary for entry; Charge any fee due to our Deposit Account No. 24-0037</p>
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APPENDIX

Changes to Claims:

Claim 18 is added.

The following is a marked-up version of the amended claims:

13. (Amended) A method for decompressing compressed image data that is compressed by discarding pixels along a direction parallel to an edge while maintaining pixels along a direction perpendicular to the edge, the method comprising:

decompressing a single byte of compressed data to produce four pixels of non-continuous tone data.

15. (Three TimesTwice Amended) A decompression system for decompressing image data, the image data containing non-continuous tone data and continuous tone data, the non-continuous tone data compressed by discarding pixels along a direction parallel to an edge while maintaining pixels along a direction perpendicular to the edge, the system comprising:

a decompressor that decompresses a data bitword-map to provide high spatial resolution data containing non-continuous tone data using extra resolution in a direction substantially perpendicular to an edge of marks, and that decompresses the data bitword-map to provide low spatial resolution continuous tone data.